Case: Removal of tilted IVC filter (aortic penetration) and reconstruction of the IVC and iliac veins

Kucher, Nils

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LINC Live case 2017

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Prof. Greg Walker / Boston

Disclosure

Speaker name:

Nils Kucher

- [X] I have the following potential conflicts of interest to report:
- [X] Consulting/Honoraria: BTG, Optimed, Cook, BSCI, BARD
- [ ] Employment in industry
- [ ] Stockholder of a healthcare company
- [ ] Owner of a healthcare company
- [ ] Other(s)
- [ ] I do not have any potential conflict of interest

Case: Removal of tilted IVC filter (aortic penetration) and reconstruction of the IVC and iliac veins (female, 48 yrs)

Past medical history

- Protein S deficiency and factor V Leiden mutation
- Ongoing anticoagulation therapy
- Recurrent ilio-femoral thrombosis despite medical therapy
- Implantation of permanent Simon™ filter (2004 / USA)

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Present complaints:

Chronic venous insufficiency both legs with:

- venous claudication
- varicose veins
- hyperpigmentation
- leg swelling

⇨ Villalta-Score: 6 points

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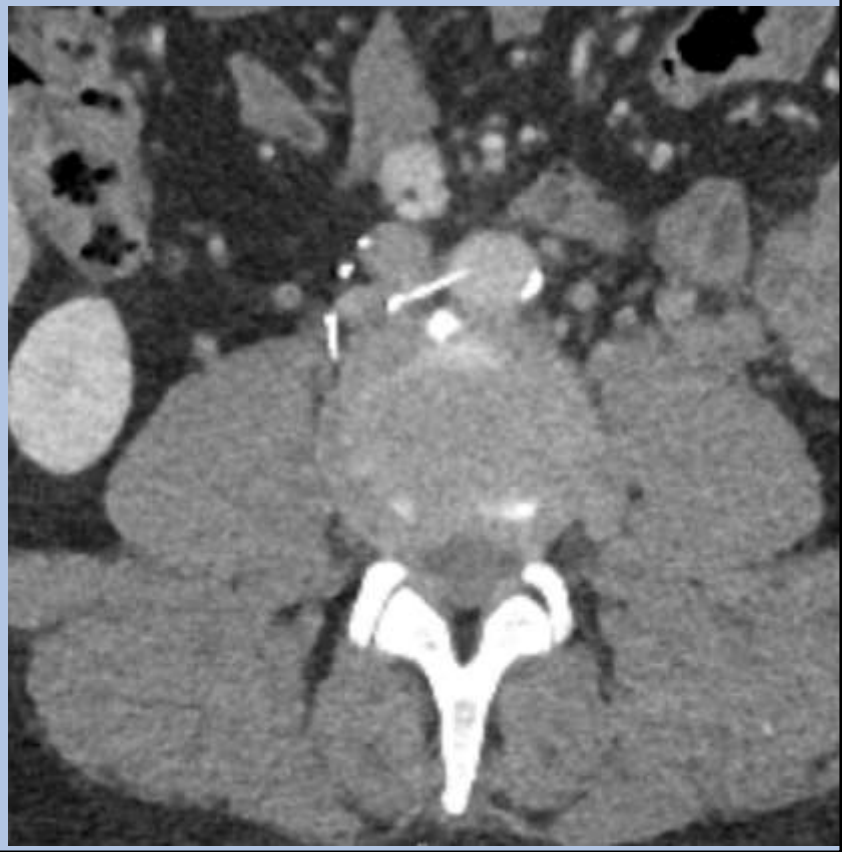
CT scan: Filter struts penetrate infrarenal aorta



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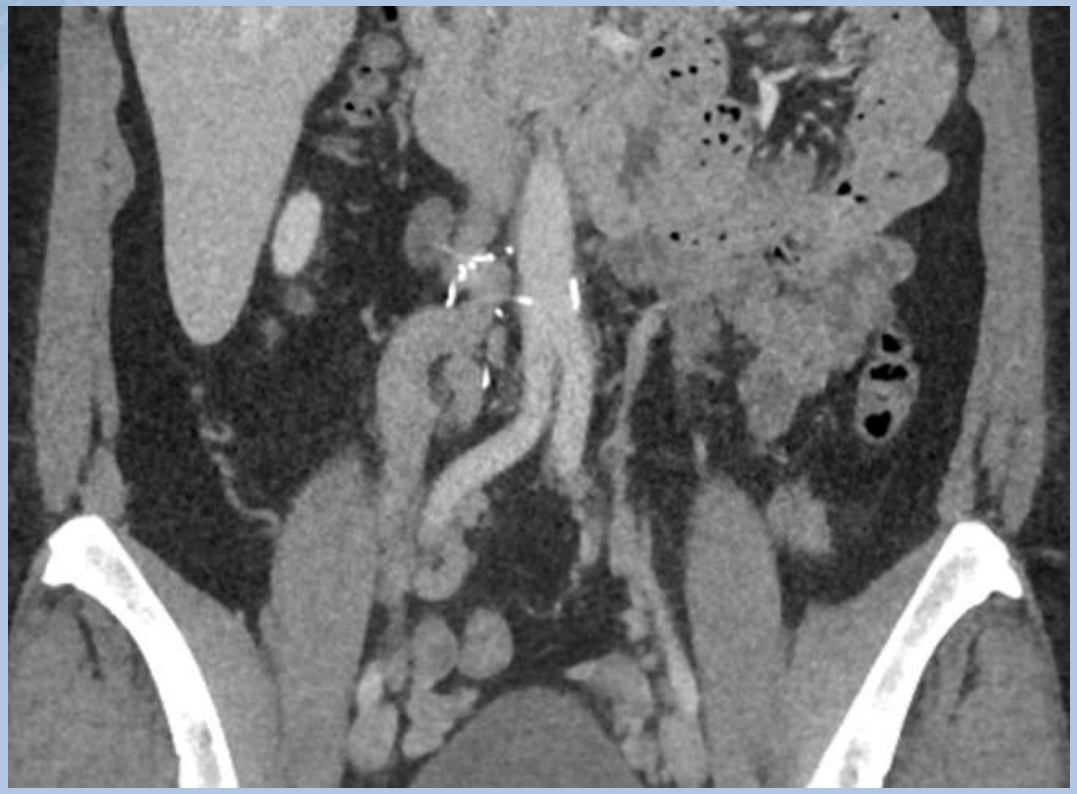
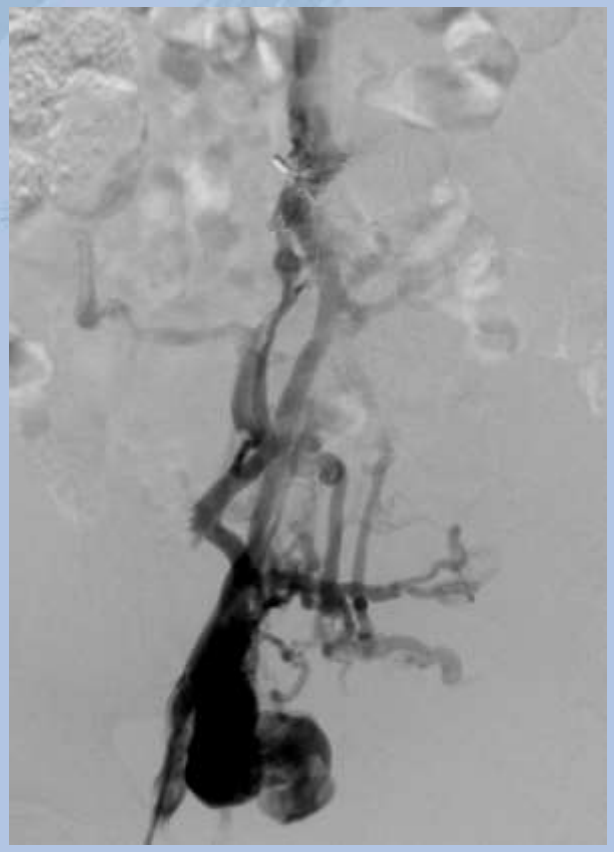
CT scan: filter tilting with hub against IVC wall



Case: Removal of tilted IVC filter (aortic penetration) and reconstruction of the IVC and iliac veins (female, 48 yrs)

Venography: occlusion of IVC and iliac veins

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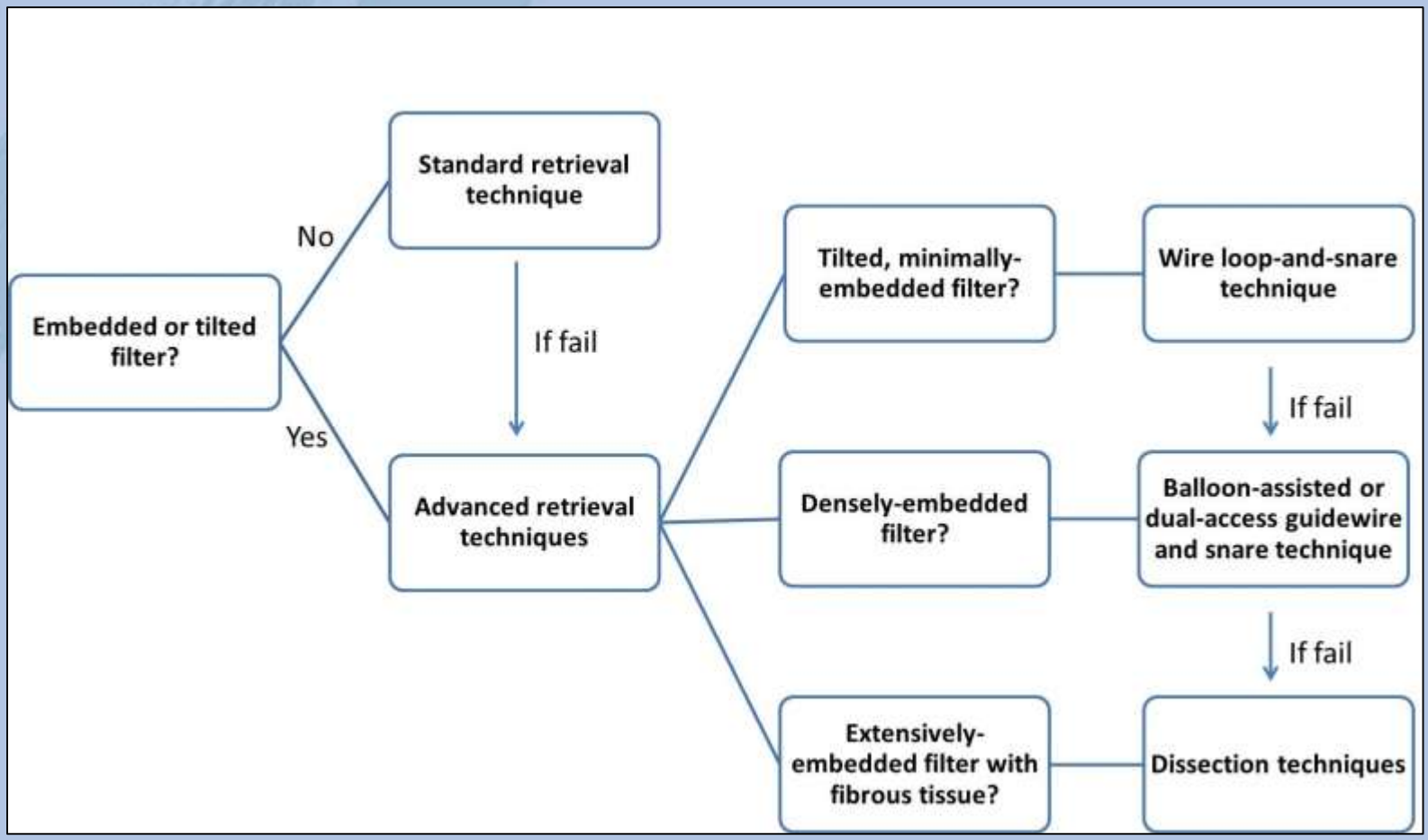
Case: Removal of tilted IVC filter (aortic penetration) and reconstruction of the IVC and iliac veins (female, 48 yrs)

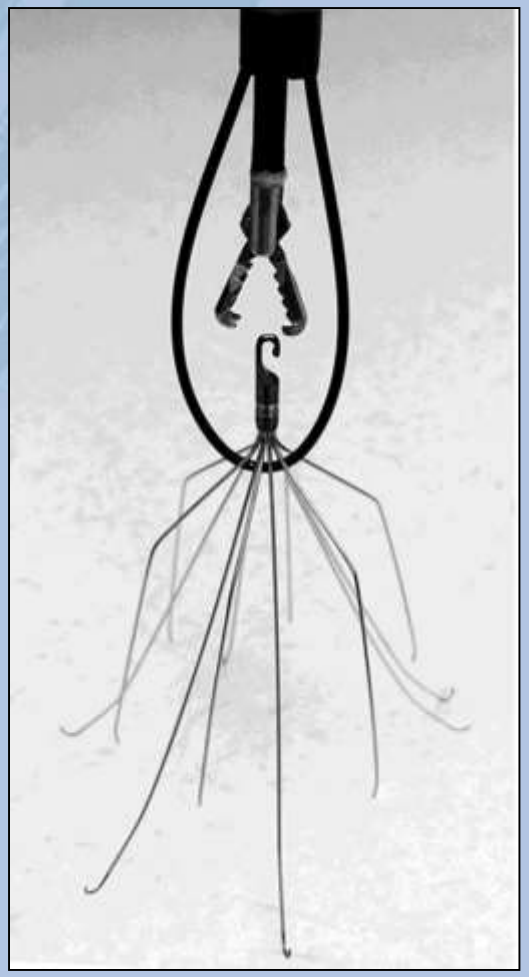
Procedural steps:

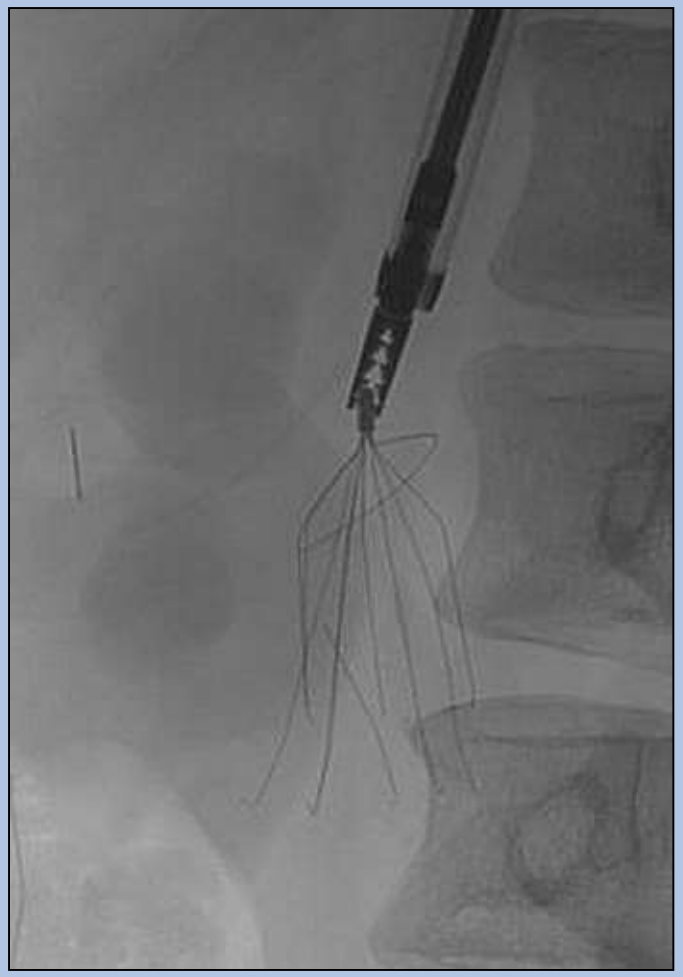
- *General anaesthesia, suppine position, urinary catheter*
- *Venous access with ultrasound guidance in both femoral veins (10F sheath)*
- *Venous access IJ (26 F Dry seal sheath, Gore)*
- *Arterial access 6F right CFA*
- *Filter extraction with endobronchial forceps from IJ access: FORCEPS ALLIGATOR 2.5MMX55CM HARD FOREIGN BODY DOUBLE ACTION (Karl Storz)*
- *Reconstruction of IVC and iliac veins*
- *Pre-dilation: Atlas Balloon 14-20mm (Bard)*
- *Implantation of dedicated IVC and Iliac vein stents:*
  - *IVC: Sinus XL 22mm (OptiMed),*
  - *Iliac veins: Sinus-XL Flex 14mm (OptiMed)*
- *High-pressure post-dilation of stents: Atlas Balloon 14-20 (Bard)*

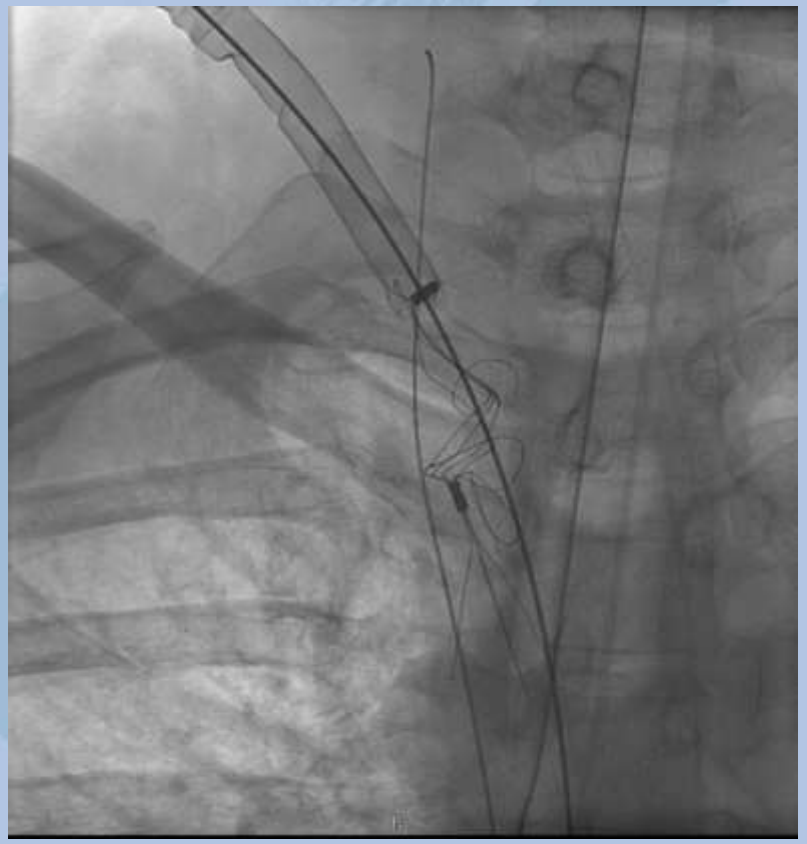
IVC filter retrieval algorithm

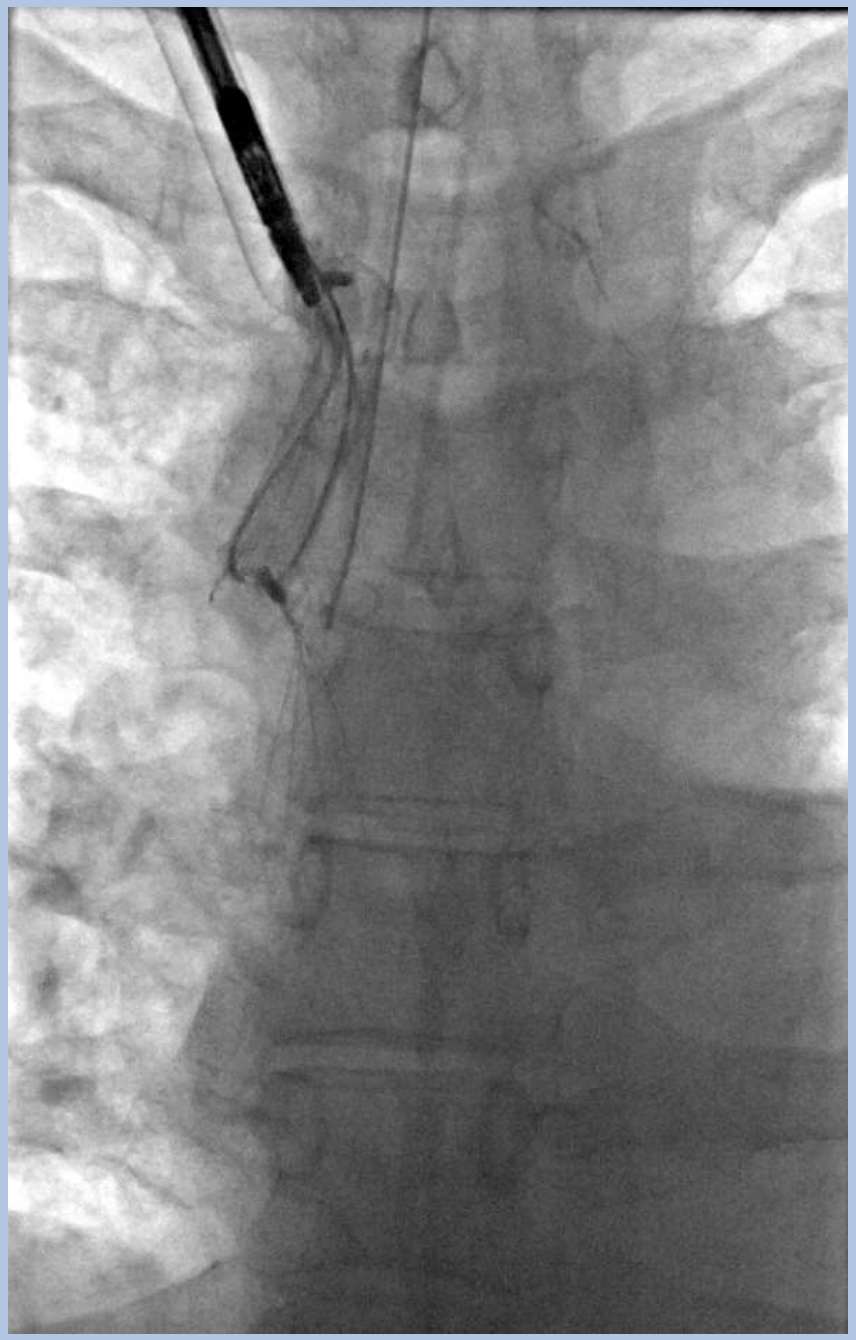


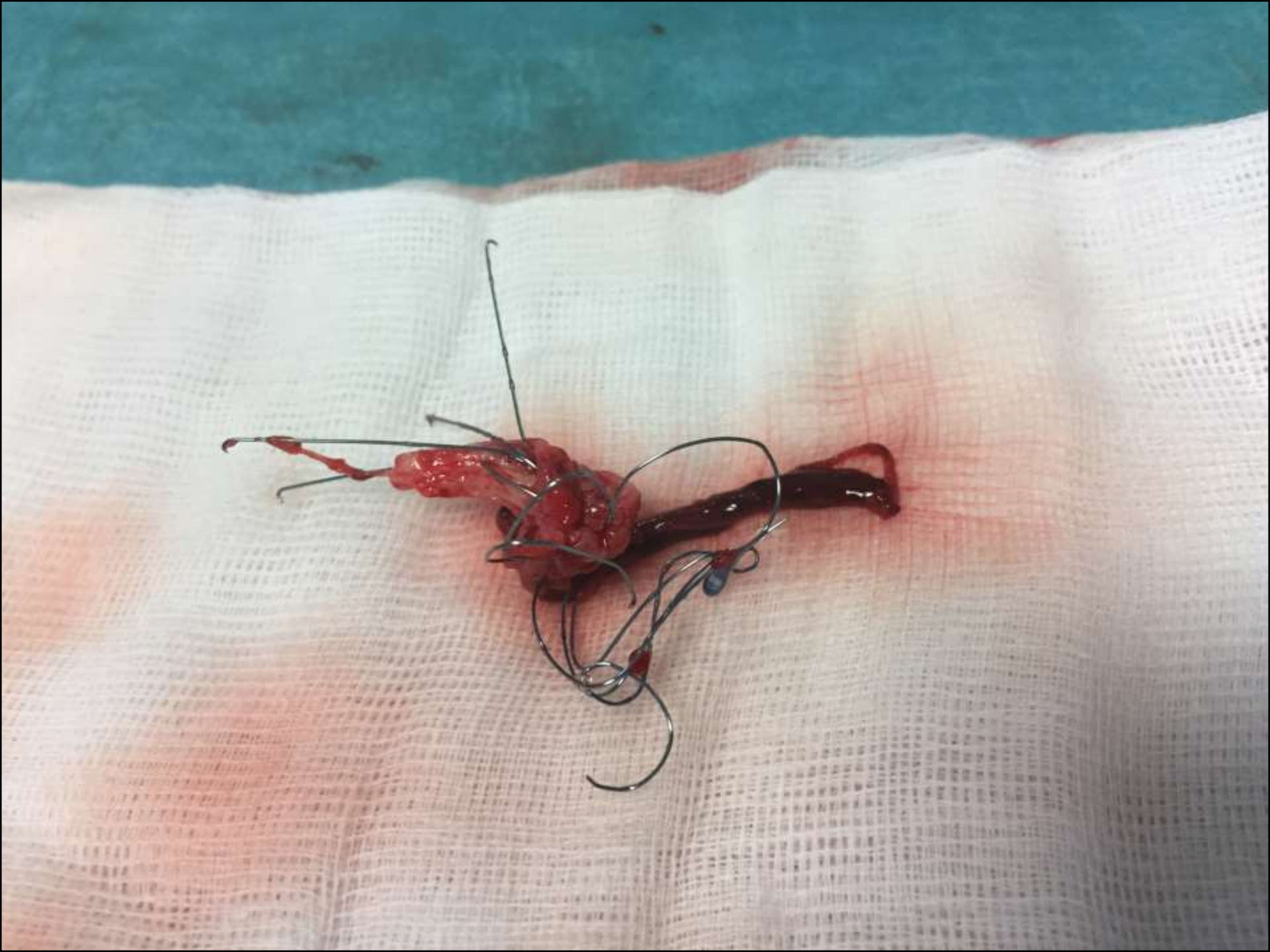
Retrieval of embedded filter using endobronchial forceps







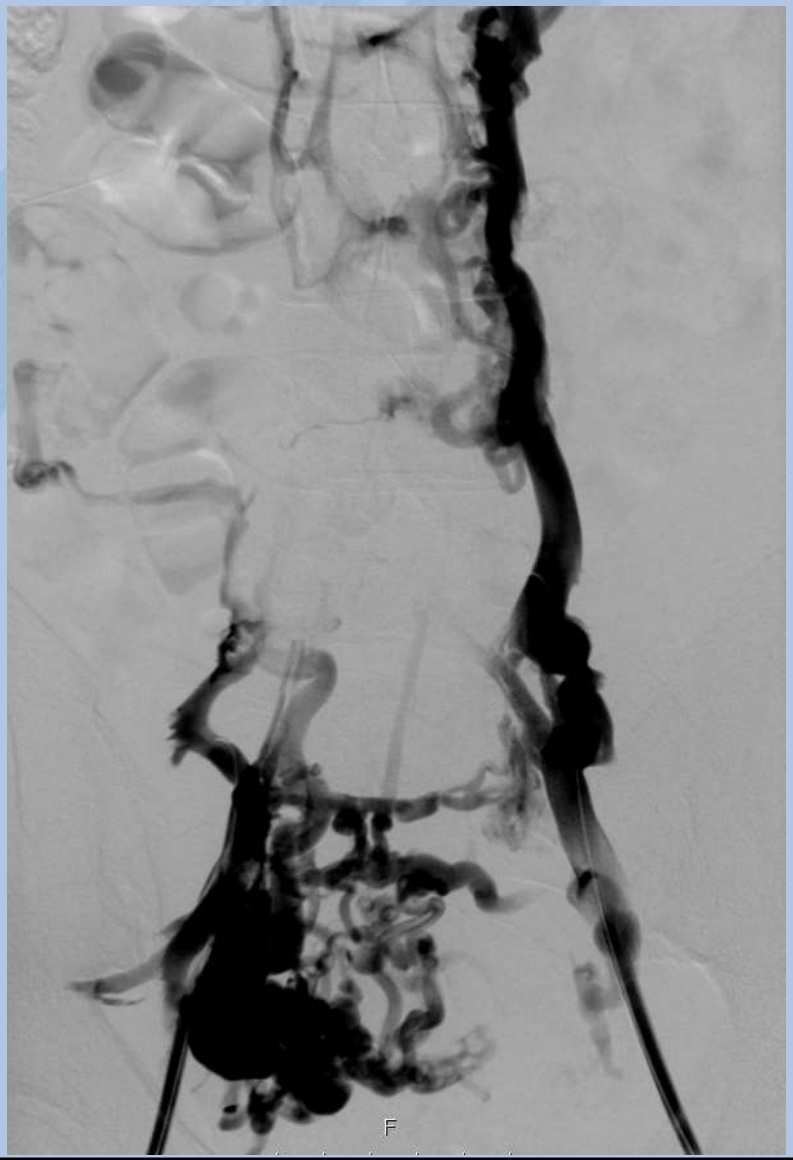


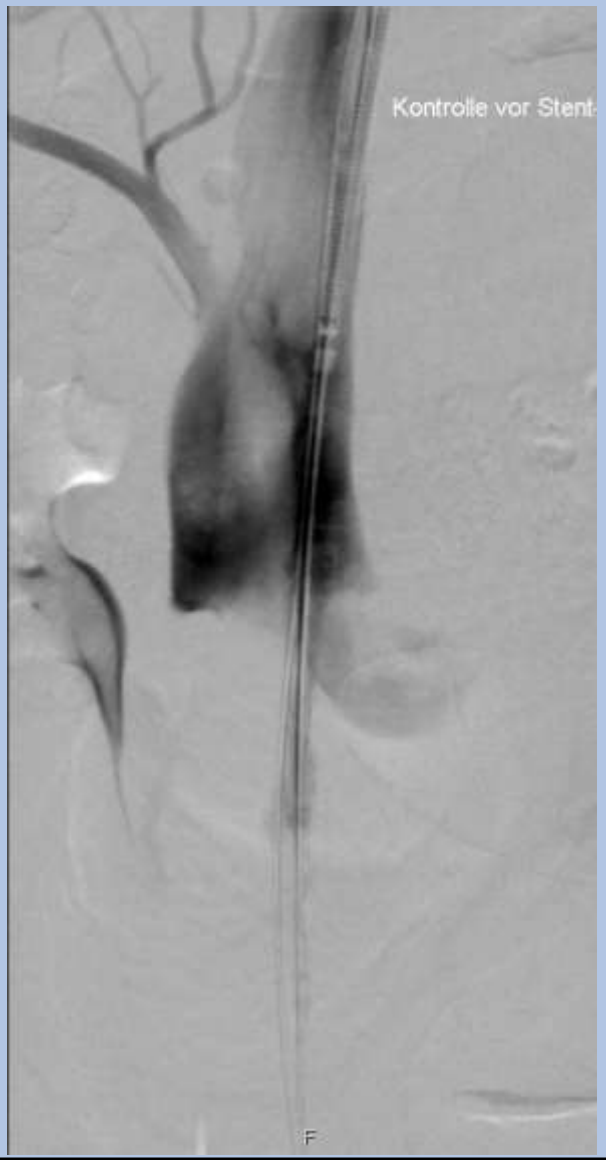


Case: Removal of tilted IVC filter (aortic penetration) and reconstruction of the IVC and iliac veins: Lage retroperitoneal hematoma 1 day post retrieval

Case: Removal of tilted IVC filter (aortic penetration) and reconstruction of the IVC and iliac veins: Residual retroperitoneal hematoma 3months post retrieval

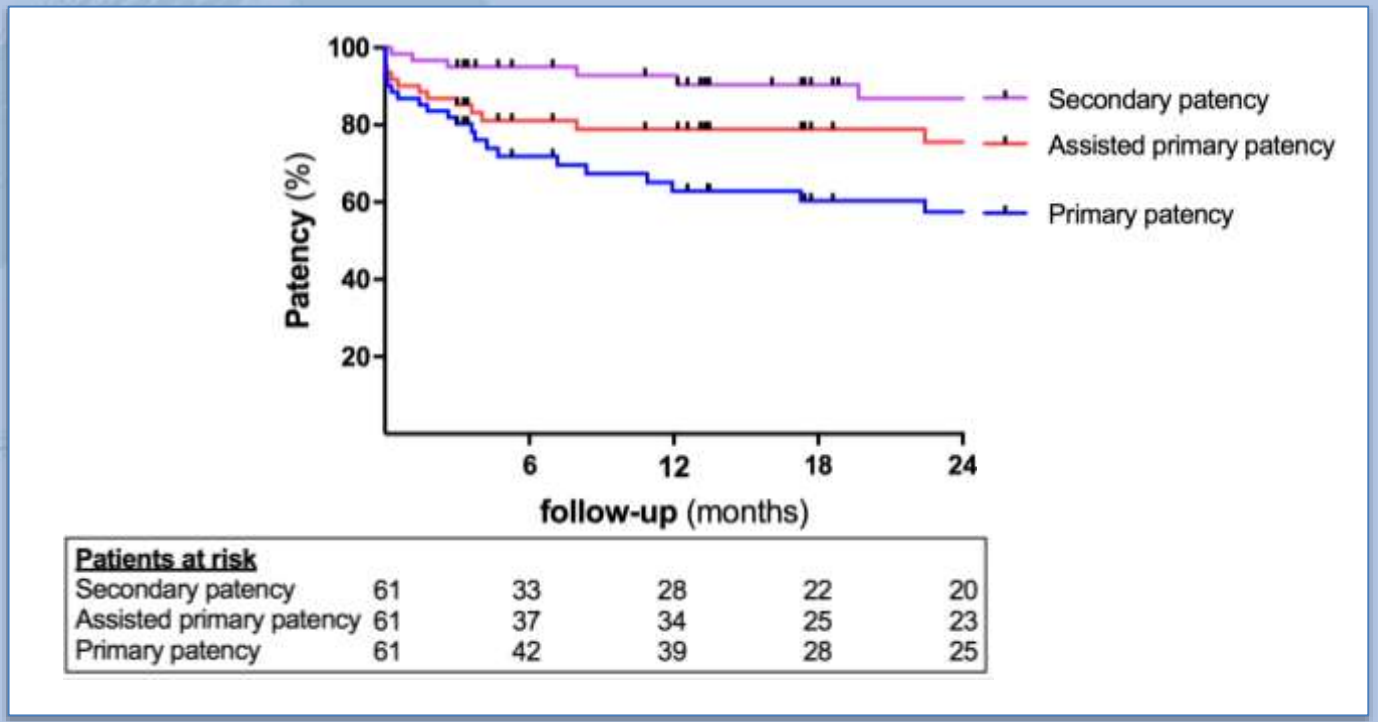
Case: Reconstruction of the IVC and iliac veins: 3 months post IVC filter retrieval





Case: Reconstruction of the IVC and iliac veins: 3 months post IVC filter retrieval

Endovascular IVC reconstruction with new generation nitinol stents: Patency at 24 months (n = 62)

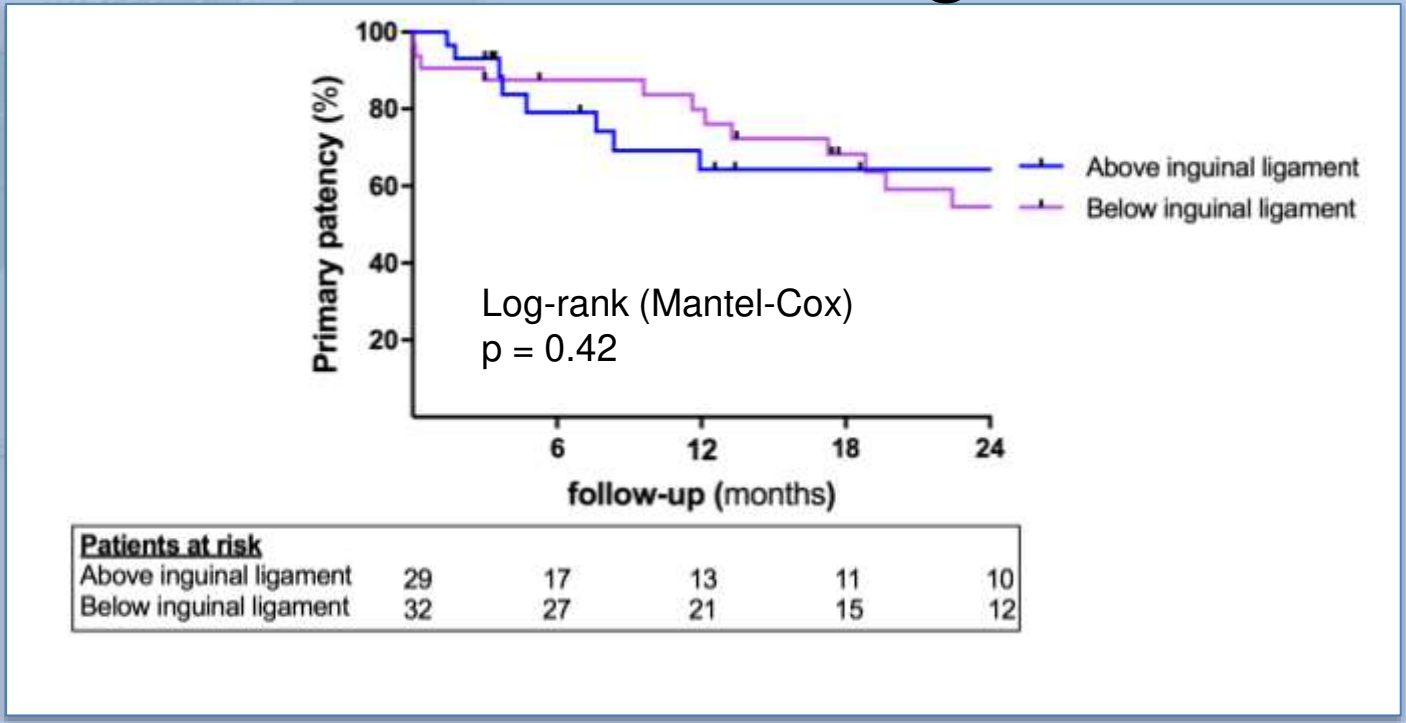


Patients at risk					
Secondary patency	61	33	28	22	20
Assisted primary patency	61	37	34	25	23
Primary patency	61	42	39	28	25

Primary Patency: 57% (95%CI 50% - 73%)
Assisted Primary Patency: 76% (95% CI 65% - 86%)
Secondary Patency: 87% (95%CI 80% - 95%)

Sebastian T, Kucher N. J Vasc Surg 2018, in press

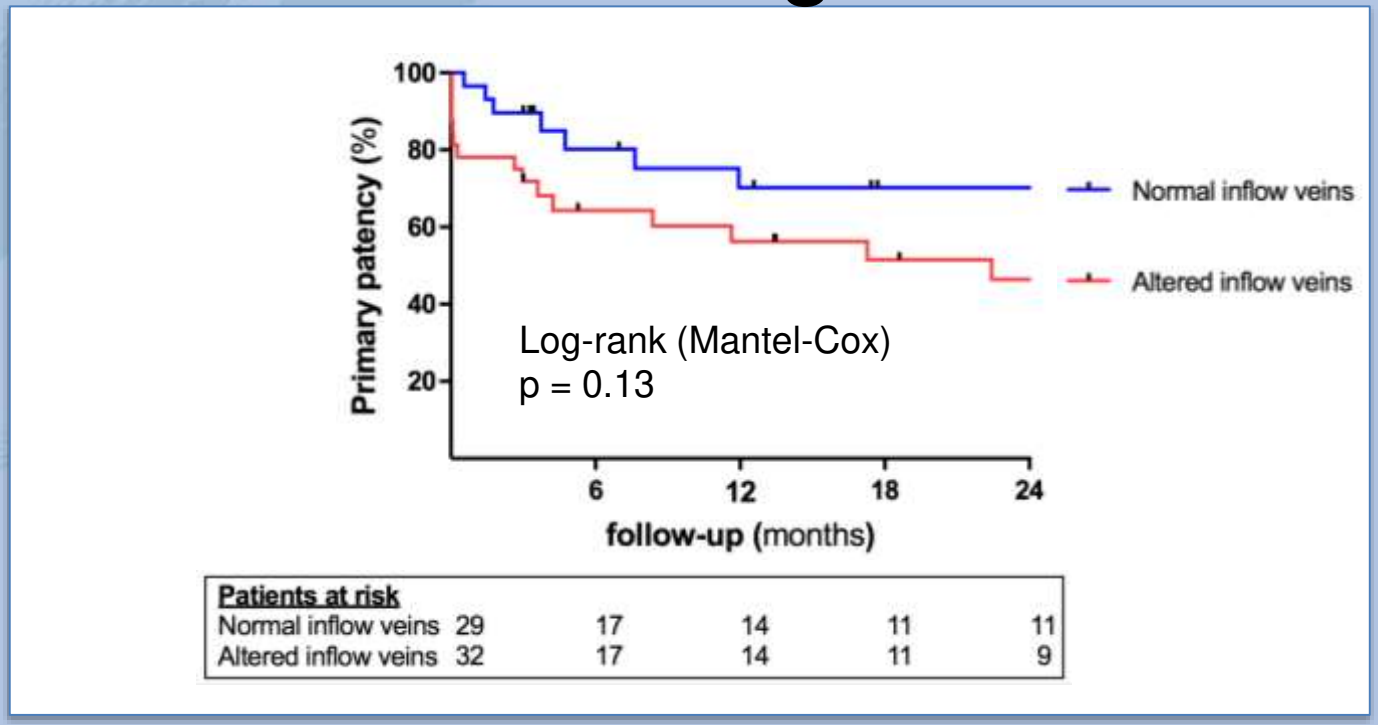
Endovascular IVC reconstruction: Patency at 24 months Distal stent landing zones



Stents above ligament: 64% (95%CI 54% - 85%)
Stents below ligament: 55% (95%CI 36% - 69%)

Sebastian T, Kucher N. J Vasc Surg 2018, in press

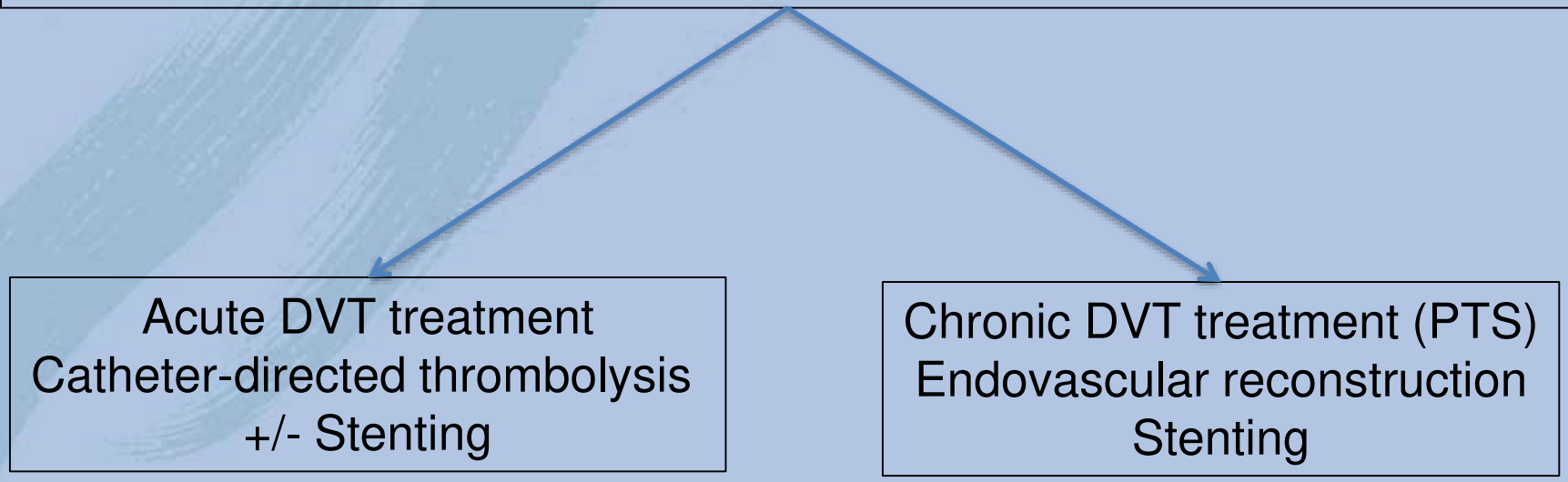
Endovascular IVC reconstruction: Patency at 24 months Postthrombotic leg inflow veins



Normal inflow: 70% (95%CI 54% - 85%)
Postthrombotic inflow: 46% (95%CI 36% - 69%)

Sebastian T, Kucher N. J Vasc Surg 2018, in press

Venous Intervention



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